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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/712,126  | 11/13/2003  | Kazuhisa Yamamoto    | YAO-3750US4         | 7681             |
| 23122   | 7590        | 09/12/2006           | EXAMINER            |                  |
| RATNERPRESTIA<br>P O BOX 980<br>VALLEY FORGE, PA 19482-0980 |             |                      | NGUYEN, DUNG T      |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2828                |                  |

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                          |                 |  |
|------------------------------|--------------------------|-----------------|--|
| <b>Office Action Summary</b> | Application No.          | Applicant(s)    |  |
|                              | 10/712,126               | YAMAMOTO ET AL. |  |
|                              | Examiner                 | Art Unit        |  |
|                              | Dung (Michael) T. Nguyen | 2828            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 81,85,86 and 90 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 81,85,86 and 90 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/09/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 81, 85-86, and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura et al. (5363117) in view of Byer et al. (5036220) and further in view of Gupta (5682398).

With respect to claims 81 and 85, Matsuura et al. show in Fig.4 a laser device, comprising:

- at least one laser light source (30) including a semiconductor laser (laser diode);
- a first optical system (4) for irradiating a spatial modulation element (7) (liquid crystal cell in column 4, line 56-57) with laser light emitted from the laser light source; and
- a second optical system (12) for irradiating a screen (9) with the light emitted from the spatial modulation element.

Matsuura et al. lack the laser light source further includes an optical wavelength conversion element in which periodic domain inverted structures are formed.

Byer et al. teach in Fig.1 the laser light source includes an optical wavelength conversion (11) element in which periodic domain inverted structures are formed (column 5, lines 46-49).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Matsuura et al. what is taught by Byer et al. to convert the laser source radiation frequency to the desired optical frequency (column 4, lines 1-3).

However, Matsuura et al. and Byer et al. lack the semiconductor laser is wavelength-locked.

Gupta teaches the semiconductor laser is wavelength-locked (col.2, l.56).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Matsuura et al. and Byer et al. what is taught by Gupta to lock the wavelength of the semiconductor laser.

With respect to claim 86, Byer et al. disclose in fig.1 an optical waveguide (17) for guiding the laser light from the semiconductor (column 4, lines 29-30).

With respect to claim 90, Gupta discloses wavelength-locking is performed using a grating (col.2, l.56).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


### Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung (Michael) T Nguyen whose telephone number is (571) 272-1949. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Michael Dung Nguyen

  
ARMANDO RODRIGUEZ  
PRIMARY EXAMINER